

What is claimed is:

1. A method of designing forms of a cable clamp and cables using a three-dimensional CAD system, comprising:
 - a cable designating step of designating one or more cables to be clamped;
 - a cable area calculating step of calculating a cross-sectional area of each
 - 5 designated cable based on attribute data of each cable, and calculating an area necessary for clamping the cables based on a result of the calculation;
 - a cable clamp designating step of designating a cable clamp to be used;
 - a cable clamp checking step of comparing an inner-diameter area corresponding to an inner diameter of the cable clamp with the area necessary for clamping the cables;
 - 10 a cable routing position for clamping designating step of designating control points assigned to a portion of each cable, which is affected by the cable clamp, wherein each control point indicates a reference position in a cable routing;
 - a cable routing position data adding step of adding data of the designated control points of each cable to data of control points of each cable which are assigned to
 - 15 each cable in advance; and
 - a cable form generating step of generating a complete cable form based on the data obtained in the cable routing position data adding step.
2. A method of designing forms of a cable clamp and cables using a three-dimensional CAD system, comprising:
 - a cable designating step of designating one or more cables to be clamped;
 - a cable area calculating step of calculating a cross-sectional area of each
 - 5 designated cable based on attribute data of each cable, and calculating an area necessary

for clamping the cables based on a result of the calculation;

a cable clamp selecting step of selecting one or more cable clamps suitable for the area necessary for clamping the cables;

a cable clamp designating step of designating a cable clamp to be used from
10 among the selected cable clamps;

a cable routing position for clamping designating step of designating control points assigned to a portion of each cable, which is affected by the cable clamp, where each control point indicates a reference position in a cable routing;

a cable routing position data adding step of adding data of the designated
15 control points of each cable to data of control points of each cable which are assigned to each cable in advance; and

a cable form generating step of generating a complete cable form based on the data obtained in the cable routing position data adding step.

3. A method of designing forms of a cable clamp and cables using a three-dimensional CAD system, comprising:

a cable designating step of designating one or more cables to be clamped;

a cable area calculating step of calculating a cross-sectional area of each
5 designated cable based on attribute data of each cable, and calculating an area necessary for clamping the cables based on a result of the calculation;

a cable clamp selecting step of selecting one or more cable clamps suitable for the area necessary for clamping the cables;

a cable clamp designating step of designating a cable clamp to be used from
10 among the selected cable clamps;

a cable clamp model data retrieving step of retrieving three-dimensional model

data of the designated cable clamp which is stored in advance;

a cable clamp position designating step of designating a desired position of the cable clamp;

- 15 a cable clamp position determining step of determining a position of the cable clamp based on the three-dimensional model data and data of the designated desired position of the cable clamp;

a cable routing position for clamping designating step of designating control points assigned to a portion of each cable, which is affected by the cable clamp, wherein

- 20 each control point indicates a reference position in a cable routing;

a cable routing position data adding step of adding data of the designated control points of each cable to data of control points of each cable which are assigned to each cable in advance; and

- a cable form generating step of generating a complete cable form based on the
25 data obtained in the cable routing position data adding step.

4. A method of designing forms of a cable clamp and cables, as claimed in any one of claims 1 to 3, wherein the control points designated in the cable routing position for clamping designating step include points determined so that the cables pass perpendicularly through end faces of the cable clamp.

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5. A method of designing forms of a cable clamp and cables, as claimed in any one of claims 1 to 3, wherein the control points designated in the cable routing position for clamping designating step include points determined at positions away from each end face of the cable clamp by a minimum bend radius of each cable along the direction

- 5 perpendicular to each end face.

6. A computer readable storage medium storing a program for making a three-dimensional CAD system execute an operation of designing forms of a cable clamp and cables, the operation comprising:

a cable area calculating process of calculating a cross-sectional area of each of one or more designated cables to be clamped, based on attribute data of each cable, and calculating an area necessary for clamping the cables based on a result of the calculation;

a cable clamp checking process of comparing an inner-diameter area corresponding to an inner diameter of a designated cable clamp with the area necessary for clamping the cables;

10 a cable routing position data adding process of adding data of designated control points assigned to a portion of each cable, which is affected by the cable clamp, to data of control points of each cable which are assigned to each cable, in advance, wherein each control point indicates a reference position in a cable routing; and

a cable form generating process of generating a complete cable form based on the data obtained in the cable routing position data adding process.

7. A computer readable storage medium storing a program for making a three-dimensional CAD system execute an operation of designing forms of a cable clamp and cables, the operation comprising:

a cable area calculating process of calculating a cross-sectional area of each of one or more designated cables to be clamped, based on attribute data of each cable, and calculating an area necessary for clamping the cables based on a result of the calculation;

a cable clamp selecting process of selecting one or more cable clamps suitable for the area necessary for clamping the cables;

a cable clamp designating process of designating a cable clamp to be used from

10 among the selected cable clamps;

a cable routing position data adding process of adding data of designated control points assigned to a portion of each cable, which is affected by the cable clamp, to data of control points of each cable which are assigned to each cable, in advance, wherein each control point indicates a reference position in a cable routing; and

15 a cable form generating process of generating a complete cable form based on the data obtained in the cable routing position data adding process.

8. A computer readable storage medium storing a program for making a three-dimensional CAD system execute an operation of designing forms of a cable clamp and cables, the operation comprising:

a cable area calculating process of calculating a cross-sectional area of each of
5 one or more designated cables to be clamped, based on attribute data of each cable, and calculating an area necessary for clamping the cables based on a result of the calculation;

a cable clamp selecting process of selecting one or more cable clamps suitable for the area necessary for clamping the cables;

a cable clamp designating process of designating a cable clamp to be used from
10 among the selected cable clamps;

a cable clamp model data retrieving process of retrieving three-dimensional model data of the designated cable clamp which is stored in advance;

a cable clamp position determining process of determining a position of the cable clamp based on the three-dimensional model data and data of a designated desired
15 position of the cable clamp;

a cable routing position data adding process of adding data of designated

control points assigned to a portion of each cable, which is affected by the cable clamp, to data of control points of each cable which are assigned to each cable, in advance, wherein each control point indicates a reference position in a cable routing; and

- 20 a cable form generating process of generating a complete cable form based on the data obtained in the cable routing position data adding process.

9. A computer readable storage medium as claimed in any one of claims 6 to 8, wherein in the program, the designated control points include points determined so that the cables pass perpendicularly through end faces of the cable clamp.

10. A computer readable storage medium as claimed in any one of claims 6 to 8, wherein in the program, the designated control points include points determined at positions away from each end face of the cable clamp by a minimum bend radius of each cable along the direction perpendicular to each end face.